

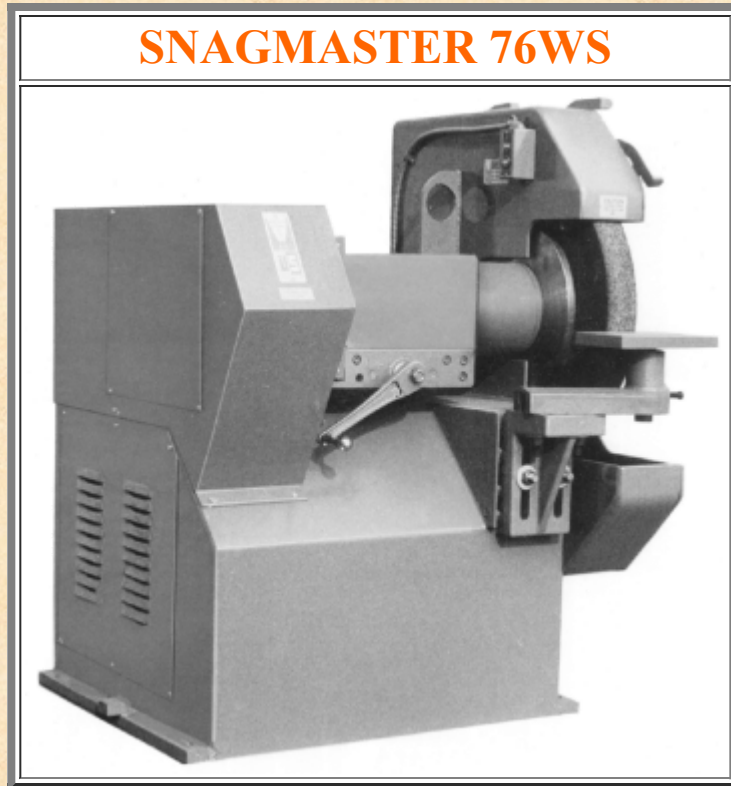


U.S. ELECTRICAL TOOL INC.

MODEL 76WS SNAGGING GRINDER OPERATION MANUAL

[WARRANTY](#)[INSTALLATION](#)[WHEEL ORIENTATION](#)[START UP](#)[OPERATION](#)[MAINTENANCE](#)[TROUBLE SHOOTING](#)[VARIABLE SPEED SHEAVE](#)[CHECKING WHEEL SPEED](#)[BELT REPLACEMENT](#)[BALL BEARING REPLACEMENT](#)[MAINTENANCE SCHEDULE](#)[PARTS](#)[PARTS ILLUSTRATIONS](#)

SNAGMASTER 76WS



WARRANTY



U.S. Electrical Tool Inc. has inspected each machine prior to shipment and guarantees to replace any defect due to faulty material or workmanship. Our obligation assumed under this guarantee is limited to making replacement of any part or parts returned to the factory within one year of the shipping date, transportation charges prepaid, which prove to our satisfaction upon examination to have been defective and not to have been misused or mishandled.

We reserve the right to decline responsibility where repairs have been made or attempted by others without factory authorization.

U.S. Electrical Tool Inc. assumes no responsibility for contingent or consequential damage. No other guarantee is authorized.

INSTALLATION

The foundation for this unit should be flat, level and solid. Four holes for mounting are provided to secure the base to the foundation.

Refer to the nameplate before connecting the power lines to this machine to insure your electrical service matches that shown on the nameplate.

Remove the spindle nut (71), outer wheel flange (64) and install the grinding wheel properly rated for the RPM shown on the caution plate located on the front of the wheel guard.

The wheel must be set into place, *not forced*. Use wheel blotters on each side of the wheel, between the grinding wheel and the wheel flanges. These are readily available from your wheel source. Replace the outer wheel flange (64) and spindle nut (71).

Jog the unit to make sure the wheel is rotating correctly. The wheel must run "down" as viewed from the operation's position. If the wheel runs "up," turn off the main power supply and reverse any two of the main power lines.

WHEEL ORIENTATION

Do not operate the machine with wheels that are out of balance or out of round. An unbalanced wheel will cause vibration and may be corrected by orienting the position of the wheel on the inner wheel flange (61).

To reposition the wheel, release the spindle nut (71) one-half turn and rotate the wheel independent of the spindle (66) approximately 10 degrees. Secure the spindle nut and start the machine. Repeat this process until unit is in balance. In most cases, new wheels will have an inscription on the wheel itself indicating "top" or "up." This automatically located the heaviest section of the wheel and compensates for pilot diameter fit.

If a wheel is out of round, it must be "dressed" to a true diameter. Use a fixed dresser mounted on the tool rest (88). If vibration persists, refer to the [Trouble Shooting](#) section for corrective procedures.

START UP

Start the machine. Turn the feed adjustment (65). **CAUTION!** *Do not turn the feed adjustment unless the motor is running.* Move the wheel forward until it is within 1/8" of the guard lip. The machine is now operating at the proper speed for maximum efficiency. Stop the machine and allow the wheel to stop. Adjust the tool rest (88, 89) 1/8" from the wheel.

OPERATION

DO keep the tool rest 1/8" from the wheel.
DO keep the wheel within 1/8" of the guard lip.

DO NOT adjust the feed screw adjustment while the machine is not operating.
DO NOT alter the guard as it is an integral parts of the speed control.
DO NOT remove slide stop (102) or bearing housing stop (101).
DO NOT operate machine with the outer wheel flange (64) loose on the spindle.

MAINTENANCE

The spindle ball bearings (51) in this unit are packed with Chevron SRI #2 grease and are of the permanently lubricated type.

The feed screw nut (80) is lubricated by means of a grease fitting located 5" below and on the centerline of the feed adjustment (65). Use Chevron Polyurea EP #2 grease.

The thrust bearings (72) require only a few drops of SAE #20 oil periodically.

The slide plate (82) and feed screw (58) should be brushed and cleaned when abrasive grit and metallic dust accumulates on these assemblies. To relubricate, use a dry aerosol lubricant on the exposed surfaces.

VARIABLE SPEED SHEAVE

Several variable speed sheaves (73) are available on a direct interchangeable basis. Most are permanently lubricated.

Some of the older variable speed sheaves were equipped with an oil reservoir. To fill this reservoir, located on the outboard end of the sheave, rotate the sheave by hand until the oil filler hole is at the top position. Remove the oil filler plug. Rotate the sheave 90° either direction. If oil comes from the hole, replace the plug. If no oil appears, rotate the sheave until the oil hole is at the top position and fill with AGMA #15 oil.

NOTE! Improper oil causes the deterioration of the "O" rings within the unit.

CAUTION! After installation or replacement of any drive component (73, 78 or 79) always check the wheel speed through its entire range. See instructions for checking wheel speed below.

CHECKING WHEEL SPEED

Remove the grinding wheel and measure that distance from the center of the spindle to the safety lip on the wheel guard. Subtract 1/8", which represents the operating wheel clearance. The remainder represents the radius of the wheel removed. Multiple this figure by two to ascertain the diameter.

With the spindle in this position, start the machine and use a tachometer to determine the actual spindle RPM. Convert this RPM reading to surface speed with the following formula:

$$\text{SFPM} = \text{WD} \times \text{RPM} \times 0.262$$

SFPM = Surface feet per minute

WD = Wheel diameter

RPM = Spindle speed

0.262 = PI divided by 12

If the wheel removed is new and is of the same size as the capacity of the machine, the RPM should be the same as the RPM shown on the grinding wheel. The speed in feet per minute obtained from the above formula should never exceed the surface speed shown on the caution plate located on the wheel guard.

Using the initial procedure, take additional tachometer readings in 1" radius increments throughout the spindle adjustment range. The resulting surface speed derived from the formula *must not exceed* the maximum surface speed shown on the machine caution plate.

BELT REPLACEMENT



Disconnect power supply.

Remove the grinding wheel and the old belt (78). Move the wheel head to the extreme rear position. Place new belt (78) over variable speed sheave (73) and the belt changing hook welded to inner rear wall of the base. Move the wheel head forward to seat the belt deep in the groove of the sheave. Reverse the direction of the wheel head and place the belt over the motor pulley (79). Rotate the spindle pulley by hand until the belt is taut.

Reconnect power supply.

CAUTION! It is mandatory that all belt replacements must be exactly the same as originally installed at the factory. All belts have a standard code as to size. Example: 4430V850, the first two digits multiplied by .0625" indicate the top width. The second two digits indicate the included angle of the belt. The remaining numbers indicate the pitch length of the belt. Hence, 4430V850 is 44 x .0625" = 2.750" across the top, with a 30° included angle and a pitch length of 85.0". Various variable speed belts (78) are furnished to cover the range of horsepower requirements.

BALL BEARING REPLACEMENT



Remove spindle nut (71), outer and inner wheel flanges (64, 61), variable speed sheave (73) and the retaining screws holding the dust cap (57). Use a spanner wrench to remove the bearing lock nut (53). On the right hand spindle assemblies (wheel on right side of machine), the bearing lock nut has right hand threads; left hand assemblies have left hand threads. Remove the variable speed sheave (73), dust cap (56) and bearing lock nut (52). Note: the threads of bearing lock nut (52) are opposite of the threads of bearing lock nut (53).

Using pressure, press out the spindle (66) in either direction. One bearing will remain on the spindle and has to be removed with a bearing puller. The bearing remaining in the spindle housing (70) should be removed by inserting a rod through the opposite end of the bearing housing and pressing against the inner bearing race. Light tapping on the rod will remove the bearing. **CAUTION!** Excessive hammering on the inner race will result in damage to the bearing. In reassembling, insure that bearings and bearing surfaces are free of any foreign matter. Press one bearing onto the spindle and the other bearing into the spindle housing. Bearings are set by tightening the bearing lock nuts (52, 53). Be sure to install the proper dust cap (56, 57) on the proper side. The dust cap (57) on the wheel side has a longer pilot which locks the outer race of the ball bearing. The other dust cap allows clearance between the bearing and the dust cap.

MAINTENANCE SCHEDULE



Routine maintenance should be performed on a regular basis determined by the number of shifts

operated and severity of use.

PARTS



When ordering replacement parts or referring to this machine, always state Model Number and Serial Number. Refer to [Parts Illustrations](#) below for part identification. The parts shown are for a Right Hand Grinder.

Click on any of the images below to obtain a larger, higher resolution image. Use the Browser's Back button to return to this manual.

TROUBLE SHOOTING



BEARING RUNNING HOT

Determine actual operating temperature by a thermal indicator. Bearing greases are designed to operate at 200°F. If excessive heat is present, inspect the ball bearing. To remove the seal, insert a knife blade between the seal and the bearing race. Replace the bearing 30% full with Chevron SRI #2. Snap the seal back in place. If excessive heat continues, replace the bearings.

VIBRATION

Be certain wheel has been properly installed and vibration is not due to wheel balance or out of round condition. See Wheel Orientation instructions.

To determine the source of vibration, remove the wheel and restart the grinder.

- Vibration due to excessive slide clearance is corrected by adjusting the tapered gib (83) as follows:
 - Loosen rear gib adjusting screw lock nut (86) and back off gib adjusting screw (85).
 - Tighten front gib adjusting screw (84) until all play is removed between slide (82) and taper gib (83).
 - Turn rear adjusting screw (85) until it is firmly seated against taper gib (83) and secure with lock nut (86).
- With the motor running and the wheel removed, turn the ratchet wrench (65) and move the head forward and reverse to determine if the variable speed sheave is functioning. If there is any hesitation, spray the arbor between the flanges with a molybdenum dry lubricant. Do not allow lubricant to get onto the sides of the sheave.
- Check the belt (78) for cuts or dirt accumulation.
- Check both sheaves (73, 79) to see if they are loose on the shafts.
- Check the wheel flanges (61, 64) for nicks or wear.
- Check the foundation bolts and surface upon which the grinder is mounted.

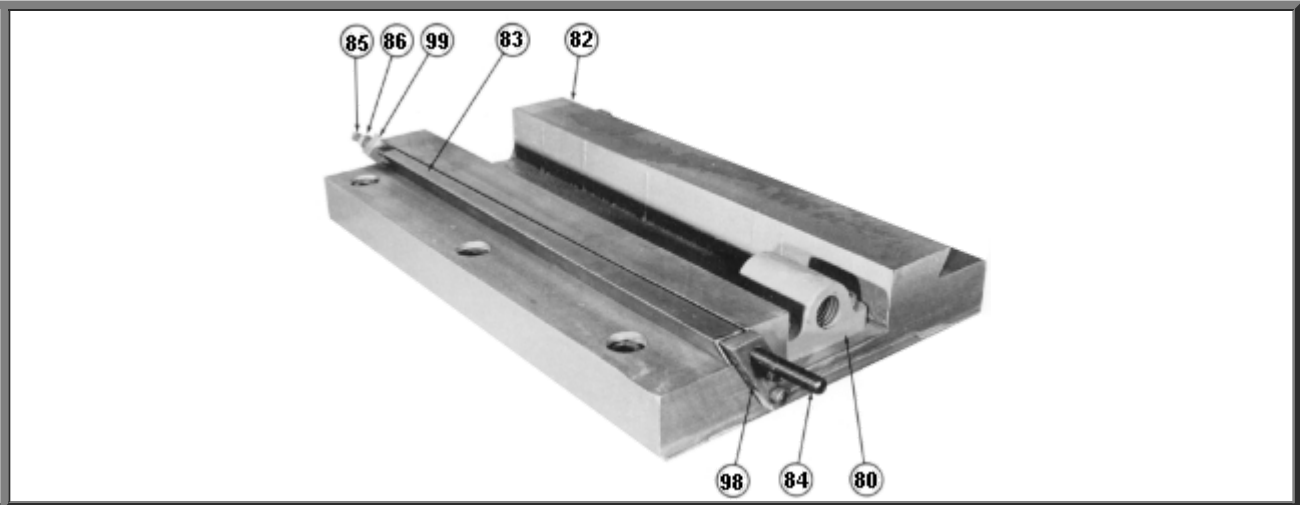
Remount the wheel according to the manufacturer's instructions. Mount with the heavy side (usually indicated by an arrow) down.

BELT SLIPPING

- Check companion sheave (79) on the motor to be sure belt is not bottoming.
- Check variable speed sheave (73) to make sure it is operating.
- Replace belt (78) if worn.
- Do **not** apply belt dressing.

WHEEL HEAD NOT MOVING

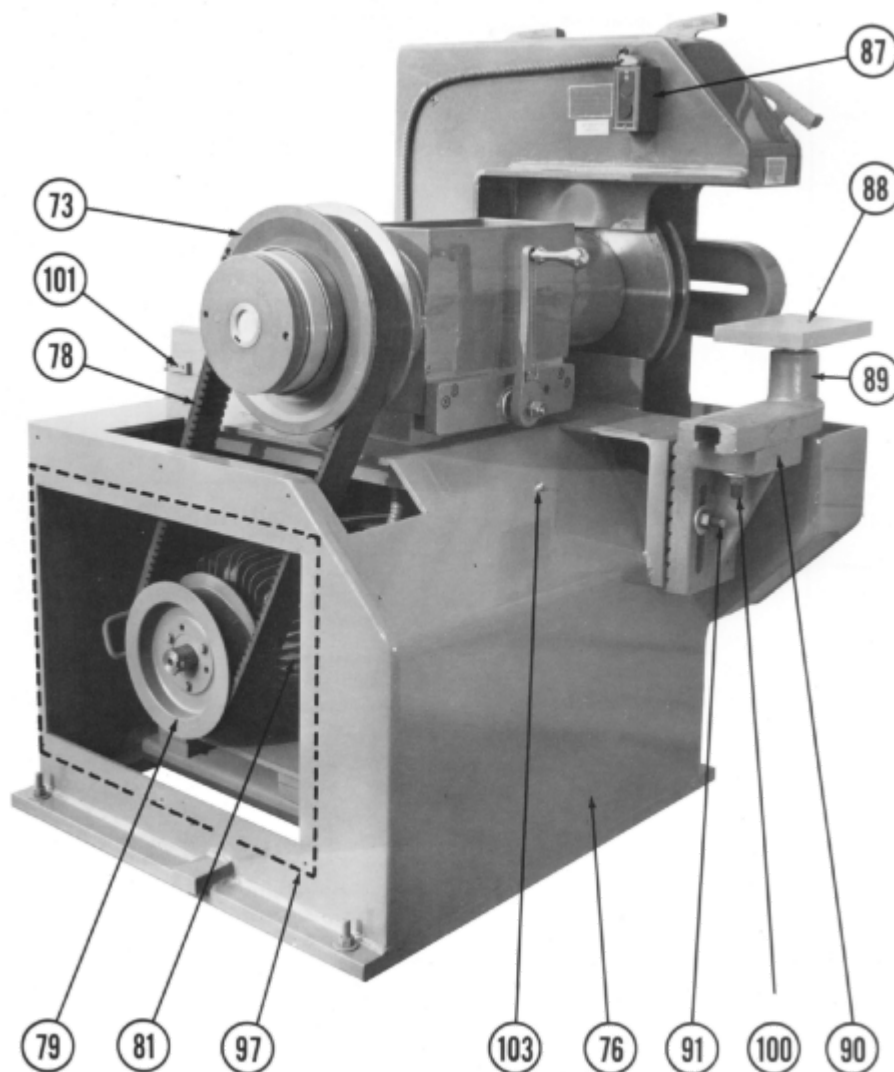
- Remove the feed screw bracket (59) and remove feed screw (58) by turning counter-clockwise.
- Check for dirt accumulation on slide (82), feed screw (58) and feed screw nut (80).



PARTS LIST

80 Feed Screw Nut	86 Adjusting Screw Lock Nut, Rear
82 Slide	98 Adjusting Screw Bracket, Front
83 Taper Gib	99 Adjusting Screw Bracket, Rear
84 Gib Adjusting Screw, Front	102 Slide Stop (not shown)
85 Gib Adjusting Screw, Rear	

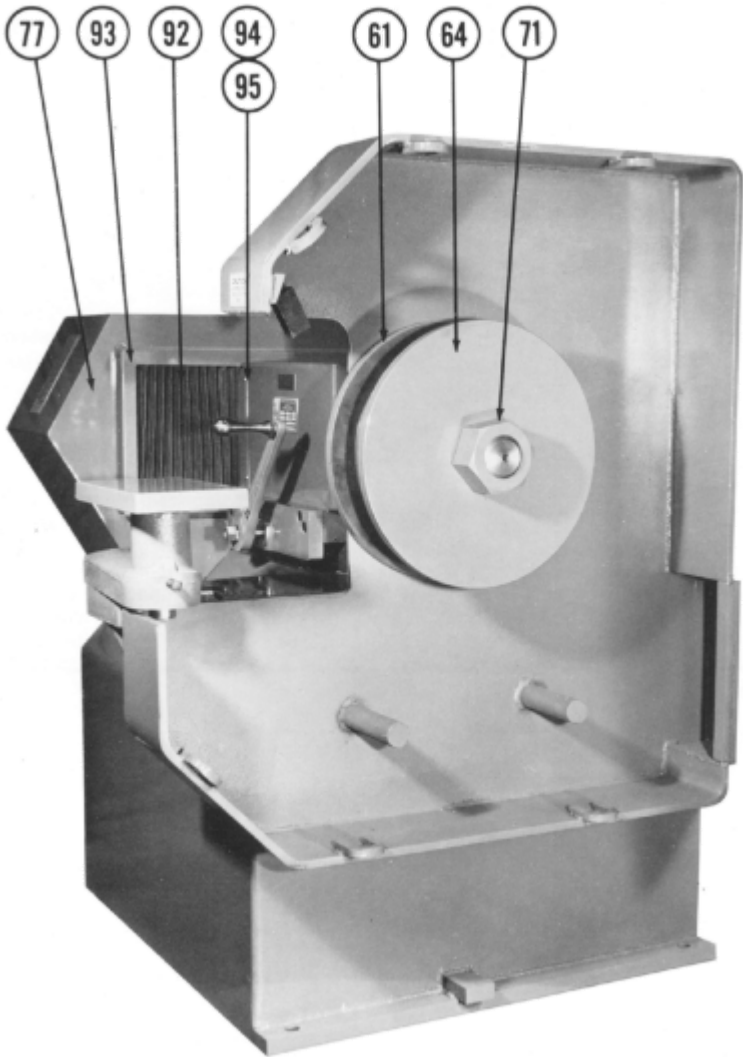




PARTS LIST

73 Variable Speed Sheave	87 Push Button Station	97 Louver Door (dotted in)
76 Base	88 Tool Rest	100 Tool Rest "T" Bolt
78 Variable Speed Belt	89 Tool Rest Arm	101 Bearing Housing Stop
79 Companion Sheave	90 Tool Rest Bracket	103 Lubrication Assembly
81 Motor	91 Tool Rest Stud	

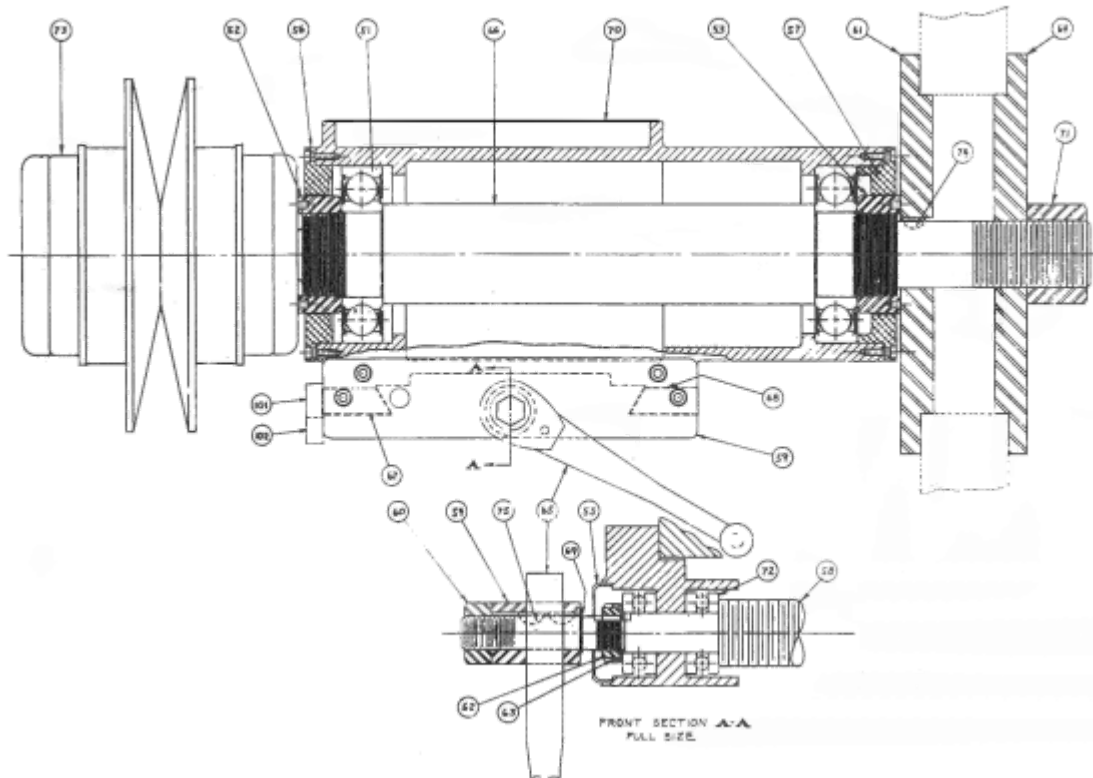




PARTS LIST

61 Wheel Flange, Inner	93 Bellows Frame	77 Base Cover
64 Wheel Flange, Outer	94 Bellows Mounting Flange, Front	92 Bellows
71 Spindle Hex Nut	95 Bellows Mounting Flange, Rear	96 Wrench (not shown)





PARTS LIST

51 Ball Bearing	60 Hex Nut	69 Snap Ring
52 Bearing Lock Nut, LH	61 Wheel Flange, Inner	70 Spindle Housing
53 Bearing Lock Nut, RH	62 Lock Nut	71 Spindle Nut, RH
54 Ratchet Wrench Bushing	63 Lock Washer	72 Thrust Bearing
55 Dust Cap, Feed Screw	64 Wheel Flange, Outer	73 Variable Speed Sheave
56 Dust Cap, Float	65 Ratchet Wrench	74 Woodruff Key
57 Dust Cap, Lock	66 Spindle	75 Woodruff Key
58 Feed Screw	67 Slide Wiper	101 Bearing Housing Stop
59 Feed Screw Bracket	68 Slide Wiper	102 Slide Stop



U.S. Electrical Tool Inc.
5928 Hamilton Cleves Rd.
Miamitown, OH 45041-0230

513-353-3660



[Return to
Library Page](#)



[EMAIL](#) [PRODUCTS](#) [HOME](#)